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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
RODRIGUEZ, GLENDA P	

ART UNIT	PAPER NUMBER
2651	12

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/885,383	Applicant(s) SCHAENZER ET AL.	
	Examiner Glenda P. Rodriguez	Art Unit 2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-8, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietzel et al. (US Patent No. 6, 292, 316) in view of Malone (US Patent No. 6, 335, 840).

Regarding Claims 1, 4, 8, 13 and 14, Dietzel et al. teach a method of detecting a disc defect comprising the steps of:

Writing a first data track to the disc with a write head including a write element (Pat. No. 6, 292, 316; Col. 3, Lines 19-29. Dietzel et al. teach the use of a read/write head and a separate measurement head (which can be considered as a certification head because it detects any defect in the medium according to the functionality of the certification head as in Page 10, Lines 10-12 of the Applicant's Specification).);

Detecting magnetic defects on the data track with a certification head (Pat. No. 6, 292, 316; Col. 1, Lines 26-52, Col. 3, Lines 18-29 and Col. 4, Lines 20-35. Dietzel et al. teach the use of an measurement head MFM (i.e. certification head) that senses (or reads) the magnetic medium in order to detect any defects occurred during the writing of the information.);

Although Dietzel et al.'s invention contains the functionality to detect thermal asperities and magnetic defects as specified by the Applicant's Summary in Page 4, L. 27 to Page 5, L. 15 (Pat. No. 6, 292, 316; Col. 1, Lines 26-52, Col. 3, Lines 18-29 and Col. 4, Lines 20-35), it fails to positively disclose a thermal asperity detecting element with the write element. However, this feature is well known in the art as disclosed by Malone, wherein it teaches a read/write head used to write tracks and read the written tracks in search for thermal asperities (Pat. No. 6, 335, 840; Fig. 7 and Col. 6, L. 49-Col. 7, L. 25. Malone teaches a read/write head that records information into the medium and then reads back the information written to detect any thermal asperities.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Dietzel et al.'s invention in order to control the movement of the read/write head (Pat. No. 6, 335, 840; See Abstract).

Regarding Claims 2 and 5, Dietzel et al. and Malone disclose all the limitations of Claims 1 and 4, repectively. Dietzel et al. uses a disk and it is obvious that a disk has a plurality of tracks, therefore permitting the thermal asperity detector can detect for a plurality of tracks.

Regarding Claims 3 and 6, Dietzel et al. and Malone disclose all the limitations of Claim 4. Malone includes the step of upon locating a thermal asperity during the step of scanning, writing a burst pattern to the disc in a location where a thermal asperity is detected wherein the burst pattern is detectable in further analysis of the disc (Pat. No. 6, 335, 840; Col. 6, L. 49-Col. 7, L. 25). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Dietzel et al.'s invention in order to control the movement of the read/write head (Pat. No. 6, 335, 840; See Abstract).

Regarding Claim 7, Dietzel et al. and Malone disclose all the limitations of Claim 4. It is obvious that when the medium is reading (or for example track seeking, which is another way of scanning or reading throughout a disk) no writing is being performed.

Claims 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietzel et al. and Malone as applied to claim 8 above, and further in view of Smith (U.S. Pat. No. 6, 154, 335). Regarding Claims 12 and 17, Dietzel et al. and Malone disclose all the limitations of Claims 8 and 14, respectively. Dietzel et al. and Malone fail to teach wherein the thermal asperity detector has a width ranging from about 10 microns to 100 microns. However, this feature is well known in the art as disclosed by Smith et al., wherein it teach a width ranging in the thermal asperity detector (U.S. Pat. No. 6, 154, 335; Col. 9, Lines 55-57). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Dietzel et al. and Malone's invention in order for the medium to be able to have that certain width because it can better perceive the thermal asperities.

Claims 9, 10, 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietzel et al. and Malone as applied to claim 8 and 14 above, and further in view of Gill (U.S. Pat. No. 5, 909, 344).

Regarding Claim 9, Dietzel et al. and Malone disclose all the limitations of Claim 8. Dietzel et al. and Malone fail to disclose that the thermal detector is composed of a magnetic material. However, this feature is known in the art as disclosed by Gill, wherein it discloses a magneto resistive head that contains nickel in its sensing element, which is a magnetic element (Pat. No. 5, 909, 344; Col. 1, Line 57 to Col. 2, Line 2). It would have been obvious to a person of ordinary skill in the art to modify Dietzel et al.

and Malone's invention in order for the medium to be made of a magnetic element because the element is able to detect thermal defect or asperities.

Regarding Claim 10, Dietzel et al. and Malone teach all the limitations of Claim 8. Dietzel et al. and Malone fail to teach that the thermal detector is made of nickel. However, this feature is known in the art as disclosed by Gill, wherein it discloses a magneto resistive head that contains nickel in its sensing element (Pat. No. 5, 909, 344; Col. 1, Line 57 to Col. 2, Line 2). It would have been obvious to a person of ordinary skill in the art to modify Dietzel et al. and Malone's invention in order for the medium to be made of nickel because the element is able to detect thermal defect or asperities.

Regarding Claim 16, Dietzel et al. and Malone disclose all the limitations of Claim 14. Dietzel et al. and Malone fail to teach that the thermal detector is made of nickel. However, this feature is known in the art as disclosed by Gill, wherein it discloses a magneto resistive head that contains nickel iron in its sensing element (Pat. No. 5, 909, 344; Col. 1, Line 57 to Col. 2, Line 2). It would have been obvious to a person of ordinary skill in the art to modify Dietzel et al. and Malone's invention in order for the medium to be made of nickel because the element is able to detect thermal defect or asperities.

Regarding Claim 18, Dietzel et al. and Malone disclose all the limitations of Claim 14. Dietzel et al. and Malone fail to teach that the thermal detector is made of nickel. However, this feature is known in the art as disclosed by Gill, wherein it discloses a magneto resistive head that contains nickel in its sensing element (Pat. No. 5, 909, 344; Col. 1, Line 57 to Col. 2, Line 2). It would have been obvious to a person of ordinary skill in the art to modify Dietzel et al. and Malone's invention in order for the

medium to be made of nickel because the element is able to detect thermal defect or asperities.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dietzel et al. and Malone as applied to Claim 14 above, and further in view of Spainger (U. S. Pat. No. 5, 122, 917). Dietzel et al. and Malone disclose all the limitations of Claim 14. Dietzel et al. and Malone fail to teach that the medium's write head has a width of 20 to 100 microns. However, this feature is well known in the art as disclosed by Spainger, wherein it discloses that the write head width has a width of 24 microns (Pat. No. 5, 122, 917; Col. 8, Line 20-21). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Dietzel et al. and Malone's invention in order for the medium to have a determined width in order for the medium to perform its job more effectively.

Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietzel et al. (US Patent No. 6, 292, 316) in view of Malone (US Patent No. 6, 335, 840).

Regarding Claim 20, Dietzel et al. and Malone teach all the limitations of Claim 17. Dietzel et al. and Malone fail to teach wherein the width of the write head is about 75 microns. One of ordinary skill in the art would have been motivated to have had about 75 microns since such ranges, absent any critically (i. e., unobvious and/or unexpected result(s)), are generally achievable through routine optimization/experimentation, and since discovering the optimum or workable ranges, where the general conditions of a claim are disclosed in the prior art, involves only routine skill in the art, *In re Aller*, 105 USPQ 233 (CCPA 1955). Moreover, in the absence of any critically (i. e., unobvious and/or unexpected result(s)), the parameters set forth would have been obvious to a

person of ordinary skill in the art at the time the invention was made, *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Regarding Claim 21, Dietzel et al. and Malone teach all the limitations of Claim 14. Dietzel et al. and Malone fail to teach wherein the write element has a first width and the read element has a second width is from 2 to 11. One of ordinary skill in the art would have been motivated to have had about 75 microns since such ranges, absent any critically (i. e., unobvious and/or unexpected result(s)), are generally achievable through routine optimization/experimentation, and since discovering the optimum or workable ranges, where the general conditions of a claim are disclosed in the prior art, involves only routine skill in the art, *In re Aller*, 105 USPQ 233 (CCPA 1955). Moreover, in the absence of any critically (i. e., unobvious and/or unexpected result(s)), the parameters set forth would have been obvious to a person of ordinary skill in the art at the time the invention was made, *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Claim 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietzel et al. and Malone as applied to claims 8 and14 above, and further in view of Sagawa et al. (US Patent No. 4, 459, 248). Dietzel et al. and Malone teach all the limitations of Claim 14. Dietzel et al. and Malone fail to teach wherein the thermal asperity detector is fabricated from a non-magnetic material. However, this feature is well known in the art as disclosed by Sagawa et al., wherein it teaches a temperature sensing device that is fabricated with a non-magnetic material (Pat. No. 4, 459, 248; Col. 1, L. 56-61). It would have been obvious to a person of ordinary skill in the art, at the time the invention was

made, to modify Dietzel et al. and Malone's invention in order to detect the temperature fluctuations in the medium.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dietzel et al. and Malone as applied to claim 8 above, and further in view of Yamamoto (US Patent No. 6, 046, 837). Dietzel et al. and Malone teach all the limitations of Claim 8. Dietzel and Malone fail to teach wherein the thermal detector is fabricated from a group consisting of nickel, beryllium and nickel-iron. However, this feature is well known in the art as disclosed by Yamamoto, wherein it teaches a thermistor in which can be fabricated with a combination of nickel, beryllium and nickel-iron (Pat. No. 6, 046, 837; Col. 5, L. 4-18). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Dietzel et al. and Malone's invention in order to the thermal detector be fabricated with these materials in order to be thermally sensitive to the asperities in the medium.

Response to Arguments

Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection. Examiner rejects independent Claims 1, 4, 8, 13 and 14 in view of Dietzel et al. in view of Malone. Applicant argues that Dietzel et al. fails to teach a certification head for detecting magnetic defects. Applicant further argues that Dietzel fails to teach using more than one head, and writing a first data track with a write element and reading the data stream in search for magnetic defects with a certifier head. Examiner cannot concur with the Applicant because Dietzel does teach a measurement head that does detect the magnetic defects of the information recorded in the medium (Col. 1, L. 26-52 in Dietzel et al. teach different magnetic defects that occur

in the medium and defines that AFM and MFM sensing devices can sense these magnetic characteristics that can occur in the medium. Col. 3, L. 19-29 in Dietzel et al. teach the use of a write head in which writes information in the medium, and then proceeds to sense with a AFM and MFM head in order to sense the magnetic defects in the medium caused by the written information. See also Col. 4, L. 21-35 in Dietzel et al. in which discloses two different heads (Element 3 is the measurement head) and teaches a read/write head, which even though is not shown, is part of Dietzel et al.'s invention.).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Galbraith (US Patent No. 5, 233, 482) and Abraham et al. (5, 527, 110) wherein both teach a read/write head that detects thermal asperities.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenda P. Rodriguez whose telephone number is (703)305-8411. The examiner can normally be reached on Monday thru Thursday: 7:00-5:00; alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (703)308-4825. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gpr
June 10, 2004.

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